NEWSLINE

Published for the employees of Lawrence Livermore National Laboratory | August 24, 2007 | Vol. 32, No. 26

What's INSIDE

2007 TRANSITION NEWS

LLNL TRANSITION INFO

Frank Russo outlines objectives and vision for Business and Operations

By Lauren de Vore
Newsline staff writer

Earlier this week, incoming Principal Associate Director for Operations and Business Frank Russo began a series of all-hands meetings in which he outlined his organization and described his vision for the directorate.

The Operations and Business entity includes four directorates: Strategic Human Capital Management, Business, Facilities and Infrastructure, and Nuclear Operations. Supporting these directorates are the functions of Staff Relations, Functional Operations, Institutional Facilities Planning and Management, Operations, and LLNS/LANS Integration.

According to Russo, the directorate's overriding mission is to enhance business efficiencies and customer value. "The science and engineering at this Laboratory are superb, and they need to be supported by operations and business practices that are equally outstanding."

The key to success in operations and business, said Russo, is working smarter, not just harder. "The scientists here are renowned for coming up with solutions that are well thought out and elegant instead of brute force. We need to take the same approach to operations. I've been impressed with much of what we've been doing in operations already — my job is to take that to the next level."

Russo noted that he has a collaborative management style. "You'll see my leadership team together a lot," he explained. "I think this style works best."

Across his organization, Russo's goal is to provide services that are valued by customers. "We need to demonstrate to customers, both inside the Lab and outside, that our operations add value to our programs and our deliverables, including those for WFO sponsors.

"We have an aging workforce, with a lot of special expertise held by people who could retire soon. We need to keep bringing in the best and the brightest.

"The transition to LLNS doesn't change this imperative," Russo said. "We'll be using somewhat different tools, but we still have the attraction of unique science, one-of-a-kind research tools, and a compelling mission. My focus is to ensure that our business systems facilitate and enhance this work."

JACQUELINE MCBRIDE/NEWSLINE

Frank Russo: "Transition isn't a revolution, it's an evolution."

Russo noted that he has been through several management transitions during his career. "You worry that, immediately upon transition, the world will be radically different. But transition isn't a revolution, it's an evolution. A year later, you look around and see that things are a bit different and you like what you're seeing. And then three years later, you notice that, yes, the world is quite different and considerably better."

"That's my goal," he said. "By bringing in new perspectives, business discipline and consistency across operations, we can provide greater value to our customers, the government and the nation."

LLNS announces available investment plans under its compensation package

Lawrence Livermore National Security, LLC (LLNS) has announced the investment plans available under its total compensation packages.

As announced during the recent benefits presentations, Fidelity will serve as the 401(k) plan provider. The plans offer a range of investment options, from conservative to aggressive plus LifeCycle funds.

Information on each of the options, along with an investment guide, is available on the LLNS Website, www.llnsllc.com. The plans are:

- Fidelity Freedom Income Fund
- Fidelity Freedom 2010 Fund
- Fidelity Freedom 2015 Fund
- Fidelity Freedom 2020 Fund
- Fidelity Freedom 2025 Fund
- Fidelity Freedom 2030 Fund
- Fidelity Freedom 2035 Fund
- Fidelity Freedom 2040 Fund
- Fidelity Freedom 2045 Fund
- Fidelity Freedom 2050 Fund
- Fidelity U.S. Bond Index Fund
- Fidelity Spartan 500 Index Fund
- Fidelity Inflation-Protected Bond Fund
- Fidelity Managed Income Portfolio
- Fidelity Balanced Fund
- American Beacon Large Cap Value Fund
- Fidelity Contra Fund
- Fidelity Growth Company Fund
- Fidelity Value Fund
- Calamos Growth Fund
- Wells Fargo Advantage Small Cap Value Fund
- Baron Small Cap Fund
- Fidelity Diversified International Fund
- Templeton World Fund

TRANSITION REMINDERS

A vacation cash-out decision must be made by Aug. 30. For employees continuing employment with LLNS, they may either cash out their UC vacation balance in full, carry over their accrued vacations hours to LLNS or cash out the balance in full and defer it to a tax-exempt account. No partial cash-outs or carry-overs will be allowed.

Employees who opt to cash out their vacation are subject to tax withholding of 25 percent federal and 6 percent state tax rate. Employees also may cash out their vacation but defer it to one or more of their UC retirement savings plans (subject to IRS limitations). These tax deferred amounts cannot be 100 percent of an employee's vacation cash out because it is subject to Federal Insurance Contributions Act (FICA) and Medicare tax.

A vacation cash-out calculator is available on the Livermore Payroll Website (https://www-cfo.llnl.gov/organization/ad/pr/) to help estimate cash-outs and potential tax impacts; however, employees are urged to weigh their options carefully and discuss potential tax consequences with their tax advisers or the Internal Revenue Service.

To make a vacation election, go to the Livermore Administrative People Information System (LAPIS) at http://www-r.llnl.gov/lapis.

457(b) CHANGES

Employees must make any last changes including starting contributions to their 457(b) by Aug. 31. The changes will affect the final UC paycheck for employees who contribute to the 457(b).

403(b) LOANS

Employees who plan to take a loan from their 403(b) must do so by Aug. 31. Employees have until Sept. 14 to make any last changes to their 403(b) contributions. In addition, Sept. 14 is the last day to make tax and direct deposit changes to affect the final UC paychecks through LAPIS at http://www-r.llnl.gov/lapis.

CalPERS long-term care

Employees have until Friday, Aug. 31, to enroll I the CalPERS long-term care program. Note: employees currently enrolled in CalPERS long-term care plan and those choosing to enroll by Aug. 31, can continue this plan after transition. To enroll, contact http://www.calpers.ca.gov.

Transition manager offers thoughts on the LLNS pension plan

A MESSAGE TO EMPLOYEES

– Barbara Peterson

Many of you continue to ask questions regarding the security of LLNS' Total Compensation Package 1 pension plan relative to the security of the UC pension plan (UCRP). I want to share with you my perspective based on information we have and what I recommend you carefully and objectively think through as you are evaluating whether TCP1 or TCP2 is right for you.

As I understand the LLNS contract, there are several points relating to pension stability and reporting that are worth noting. First is that the pension system operation will be monitored by NNSA on an annual basis. This means that, in addition to other requirements, LLNS must provide NNSA with required IRS filings regarding the pension, and with an actuarial valuation of the pension each year. Further, LLNS must provide NNSA with an independent evaluation of its management of the pension plan on an annual basis.

The second point is that LLNS must comply with federal law regulating the operation of private sector pensions. This means that the plan is subject to the requirements of the Employee Retirement Income Security Act (ERISA), which imposes legal requirements on plan sponsors for funding pension plans. In addition, LLNS must obtain an independent audit each year, which delineates pension plan information and status as set forth in ERISA.

Finally, LLNS must provide justification and obtain NNSA approval prior to making pension plan changes. Any such approval must be in writing, and prior to this, LLNS must provide extensive information to the NNSA, including an analysis of the impact of any proposed changes on actuarial accrued liabilities, and an analysis of the relative benefit value of the change. NNSA also may request any other information "of special interest" regarding the changes.

As I mentioned, federal law provides pensions protections and regulations that must be followed by private sector employers. Prompted by the default in recent years of several large defined benefit pension plans, last year Congress enacted the Pension Protection Act (PPA), which mandates requirements for funding plans and specifies the time frames for a company to eliminate under funding. Sponsors must use reasonable assumptions in determining assets and liabilities, maintain healthy funding levels and must provide full, public disclosure of funding to employees every year.

Some employees have voiced concerns that LLNS or any potential follow-on contractor could use pension funds for its own purposes or that such funds would be subject to creditors' claims. The law does not allow this. Under ERISA, funds are held in trust for the exclusive benefit of the participants. It is important to note that for eligible employees, their vested pension benefits are a legally protected right.

UC is required to transfer funds from the UCRP to the LLNS TCP1 Defined Benefit Pension Plan for liabilities associated with the LLNS employees that elect TCP1. The actual determination of the funds to be transferred will not be known for some time, but we can look to what happened at LANL as a model for what is likely to happen here.

The Los Alamos experience

At LANL, UC had been providing annual actuarial reports of total assets and liabilities to DOE for all active employees who were currently working at LANL, plus those who retired or elected inactive status from LANL. Using a current actuarial report, UC identified a pool of assets that needed to be split between LANL UCRP retirees and inactive members and Los Alamos National Security, LLC (LANS) employees who elected TCP1. Consistent with UC's LANL contract, an agreement was reached that allowed UC to keep sufficient funding in UCRP to take care of actuarially estimated liabilities for LANL retirees and inactive members. After this was determined, UC transferred the balance of the pool of LANL/UCRP assets and liabilities to LANS' TCP1 Defined Benefit Pension Plan.

While it will be a while before we know the actual outcome of the funds transfer for LLNL, I think it's safe to look at the LANL process as a model for LLNL.

Under ERISA, if in the future additional funds are needed to fund benefits in the TCP1 pension plan, LLNS would be obligated to make contributions to the plan, in accordance with the requirement of the Pension Protection Act, to "catch up." The government also has a legal obligation to reimburse the allowable costs of the LLNS contributions.

NNSA's contract with LLNS also requires that at the end of the LLNS contract, the responsibility for the pension plan and the pension plan assets be transferred to the entity that is awarded the LLNL contract with NNSA. NNSA has a continuing obligation to reimburse the allowable TCP1 pension plan costs into the future. I am confident the U.S. government will honor this requirement. DOE's track record in keeping plans funded during contract changeovers, and even in the case of closed sites is exceptional. For example, retirees of the DOE Superconducting Super Collider project, which was cancelled by Congress in the early 1990s, continue to receive their monthly pension. Similar examples can be found at DOE closure sites such as Mound, Pinellas and Rocky Flats.

I have heard employees state they believe the strength of TCP1 is dependent on the number of people in the plan, and they fear over time, the security of the plan will weaken. This is not true. The plan funding requirements are derived from age and actuarial assumptions for the current participants in the plan.

Additionally, while TCP1 will be insured by the Pension Benefit Guaranty Corporation (PBGC), given the contract requirements and federal law discussed above, it is highly unlikely that payout from PBGC coverage would ever be needed. I am unaware of any instance in which DOE or NNSA contractor employee benefit plans have required PBGC intervention to ensure that plan participants received their vested plan benefits.

Looking back at UCRP

Some employees may remember that when the UCRP was first introduced in 1961, it was met with skepticism. PERS was the pension offered at the time and some employees expressed concerns that UCRP, as a new plan, was not financially secure. History has certainly squashed those concerns and is, in fact, driving our new concerns.

See PETERSON, page 7

LLNS board of governors names benefits and investments committee members

The Board of the Governors of Lawrence Livermore National Security, LLC (LLNS) recently named the members of the LLNS Benefits and Investments Committee.

The committee is charged with administering and interpreting the LLNS benefits plans, including discretionary authority to determine eligibility for participation in and for benefits under the plans.

The committee also may appoint one or more investment managers or trustees, select investment options, make determinations under company benefit plan claims procedures and make and enforce rules and regulations necessary or appropriate for administration of the benefits plans.

The committee is authorized to hire and retain third party-experts including actuaries, auditors, lawyers, investment managers and advisers, and any other consultant that may assist the committee in carrying out its functions.

Fiduciary responsibilities include:

- Acting solely in the interest of plan participants and their beneficiaries and with the exclusive purpose of providing benefits to them;
- Carrying out their duties prudently;
- Following plan documents;
- Diversifying plan investments, and
- Paying only reasonable plan expenses.

The committee members include:

- David Black, vice president and controller for Babcock and Wilcox Companies
- Judith Boyette, associate vice president of Human Resources and Benefits at the University of California
- Shafik Haddad, responsible for integration and oversight of Bechtel National's programs in support of the National Nuclear Propulsion Program
- James Hirahara, executive director of business and finance at the University of California Laboratory Management Office
- Glenn Kizer, chief financial officer at Los Alamos National Laboratory
- Maureen Mendez, chief financial officer and business service manager for Bechtel Systems Infrastructure, Inc.
- Cherry Murray, deputy director of Science and Technology and incoming principal associate director of Science and Technology at LLNL
- Paul Rosenkoetter, the LLNS/LANS integration program director in the Business and Operations Principal Directorate
- Melvin Stanton, associate chief investment officer at the University of California
- Terry Wallace, principal associate director for science, technology and engineering at Los Alamos

2007 TELLER AWARDS

Chapman and coherent X-ray diffraction imaging

By Nancy Garcia
Newsline staff writer

Henry Chapman's research team has received accolades for work visualizing elusive material such as aerogel and imaging others such as proteins. The acclaim ranges from receiving a no-strings Teller award from the Laboratory this summer for a year of research funding to a recent submission to the Guinness Book of World Records for taking the world's fastest image in just a few femtoseconds (1 fs equals 10^{-15} seconds).

The Teller awards were initiated by the Laboratory in 2000 to encourage research that might not otherwise come about. They have been compared to a local version of the MacArthur Foundation "genius grant" fellowships.

Using coherent X-ray diffraction imaging, Chapman and his colleagues are working toward revealing three-dimensional structures of molecules before the X-rays turn the sample to vapor within a tiny fraction of a second. The technique should eventually be possible on substances that are not conducive to the crystallization or fiber ordering needed for typical X-ray diffraction experiments — such as the one that suggested the structure of DNA to Watson and Crick in the 1950s.

Chapman aims to expand upon a nascent understanding of proteins' three-dimensional form. His group's revelation of aerogel's three-dimensional structure has suggested how to make the world's lightest solid even more strong and less dense. He also would like to capture images such as a filmstrip-like sequence of a chemical reaction, or the features of entire viruses.

Chapman will help develop experiments for the Linac Coherent Light Source (LCLS) at the Stanford Linear Accelerator, which is due to come on line in 2009. He looks forward to spending the coming year perfecting a method of using a laser to guide molecules into the imaging path. "It could branch into a separate line of work," he said, "to understand the laser-particle interaction." This is a sideline to work started under his successful application for a strategic initiative Laboratory Directed Research and Development (LDRD) grant.

The short wavelength of X-rays and their penetrating power allows them to probe the three-dimensional structure of materials. However, achieving high resolution is difficult because high-resolution X-ray lenses do not exist.

"Understanding the machinery of life starts by understanding the structure of its components and how they fit together."
-Henry Chapman

However, Chapman's LDRD spells out how the limitation can be overcome by recording a diffraction pattern of the light scattered from the object. The patterns might initially appear as perplexing as a Rorschach blot seen through a kaleidoscope, but mathematical analysis acts as a "lens" to back-calculate the form of the original structure that generated the pattern. This method only works with a laser-like incident X-ray beam. The powerfully bright X-ray beams from synchrotrons can be filtered to select a single "coherent mode" to do this, but it requires throwing out more than 99 percent of the beam. X-ray free-electron lasers, such as the LCLS, will have the necessary laser-like properties, with a billion times increased coherent power.

Starting in 2006, the most advanced soft-X-ray source in the world, the FLASH free-electron laser at the Deutches Elektronen-Synchrotron facility in Hamburg, Germany, has made it possible to utilize this coherent power at wavelengths approaching the X-ray region of the spectrum. The new machine at Stanford will use even shorter wavelengths of X-rays that will offer finer resolution.

Henry Chapman

The LDRD work will contribute to the development of this capability. The hope is to decrease the diameter of the beam from 10 microns to one-tenth of a micron. Even at 10 microns, the beam is intense enough to heat the sample to a temperature of 100,000 K. The aim is to increase the intensity by another 10,000 to perform imaging at a much finer scale. The resolution should reach perhaps 2 –3 Angstroms on objects of up to about 100 nanometers in width, but the key is to use X-ray pulses that are shorter than the time it takes the object to heat up, or even move on the atomic scale. This way, it can be ensured that the material can be depicted in its intact state.

With such a capability, biological materials that are hard to crystallize, such as proteins or membrane-bound proteins that do not mix in water, should be visualized with more ease and assurance.

Being able to see these fragile molecules, and potentially their interactions, "opens up a whole floodgate of things you can study," Chapman said.

"There are still a lot of challenges in getting the molecules into the beam," Chapman said. One thought is to guide the particles with a laser beam, using the so-called "optical tweezers" approach. Molecules that are not uniformly symmetrical could be aligned to systematically build up a three-dimensional tomograph of the molecule.

"Otherwise," says Chapman, "it becomes a sort of three-dimensional jigsaw puzzle."

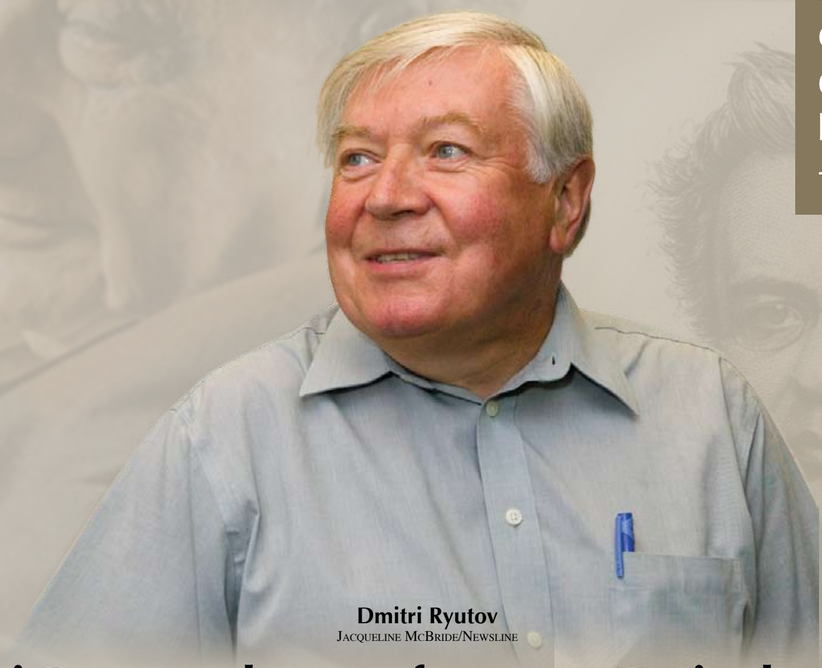
Building up a three-dimensional image requires many copies of the molecule or particle in question, he added. For now the imaging process is akin to viewing a flowing stream of particles with pinpointed flashes of light. The particle positions are random and not synchronized to the flashes and so many pass without contributing to the image. Conceivably, the sample stream could be bunched to coincide with the light pulses, which will arrive 120 times per second in the LCLS.

Chapman hopes to start imaging by using a benign virus whose structure is already known, but believes it might be possible to one day visualize reactions over time by introducing a photo-reactive material to a virus. Tracking changes over time can be helpful in confirming the accuracy of predictive models, such as by watching a sample vaporize after illumination, and comparing that occurrence to a simulation — a topic that was recently published in a paper by his team that appeared in the Aug. 9 issue of *Nature*.

Related goals include solving new structures. Of the more than 44,000 proteins whose structures have been made public, he says, there are about 9,000 classes of similar structures. It is unknown how many proteins there are, or even how many a particular genome (such as the human) produces. There are whole regions of the protein landscape that remain unexplored because they will not cooperate with existing crystallography techniques. Membrane-bound proteins, which do not mix in water, are particularly challenging, as are interacting protein complexes.

Understanding the machinery of life starts by understanding the structure of its components and how they fit together, Chapman said.

"It is necessary to realize that physics is an experimental science...eventually, everything comes down to nuts and bolts."
-Dmitri Ryutov



Dmitri Ryutov
JACQUELINE MCBRIDE/NEWSLINE

Dmitri Ryutov plans to focus on Z-pinch approach to inertial confinement fusion

By Nancy Garcia
Newsline staff writer

Dmitri Ryutov usually finds himself doing a half-dozen projects at any given time, so when he received the Teller Award this year to support new research directions, he decided to spread that out over three projects over three years – because he didn't have enough free time to drop everything this fall and focus entirely on something new.

"I decided that I should do something that I couldn't do otherwise," the theoretical physicist and Russian émigré said, "that takes coherent, quiet thinking and more careful writing than usual."

He plans to follow up on an earlier research review article he co-authored about the fusion approach known as Z-pinch, by writing a monograph and more detailed, textbook-like treatise. Z-pinch uses an electrical current to compress plasma to the energies and densities necessary to create inertial confinement fusion.

"The time has come to write something again," Ryutov remarked. "Graduate students in physics or high-end electrical engineering would get something out of it."

In a second area, he would like to explore plasma dynamics, continuing work conducted in astrophysics with Bruce Remington's group. They simulated astrophysical phenomena in the laboratory, at a fraction — down to about 100 quintillionths — of their true scale. "There are quite a few problems where I can make a substantial contribution," he said. "I just didn't have time."

Finally, Ryutov also is hoping to write a comprehensive review of processes occurring at the interface between the magnetized plasma and material wall with his Laboratory colleague Ron Cohen. The magnetic field is usually not perfectly parallel to the vessel wall, which creates a variety of subtle plasma effects important for fusion reactors.

"It's quite an interesting issue of general theoretical physics," Ryutov said.

Ryutov said he was attracted to fusion research as a young man completing his education in the late1950s-early 1960s. Fusion energy research had been carried out at the Laboratory, in his native Russia and the United Kingdom. Those efforts were declassified at the time of the 1958 Geneva Conference, to encourage the peaceful use of atomic energy.

"I thought as a young person, I could contribute," he said about the prospects apparent at the time. "We made tremendous progress. Now the fusion energy issue is economic, for commercial power plant considerations."

He spent from 1968-1993 with the Budker Institute of Nuclear Physics, which is part of the Novosibirsk academic complex in Siberia, and became a fellow of the Russian National Academy of Sciences. In 1978, he began a close collaboration with researchers at LLNL. Ryutov says partnering with experimentalists had been encouraged since his days as a student in theoretical physics.

"It is necessary to realize that physics is an experimental science.You need to be able to explain what you mean and make colleagues understand, so they can build a relevant experiment. Eventually, everything comes down to nuts and bolts."

Ryutov has been at the Laboratory for 13 years. In 1998, he was elected a fellow of the American Physical Society. In 2004, Dick Post's maglev train research, in which Ryutov assisted, received an R&D 100 award.

i.want ads

Due to the high quantity of ads and space limitations, these want ads have been abbreviated. For the complete ad listings, refer to the internal Website: http://www-r.llnl.gov/pao/news/ wantads.html or for the latest pdf download and retiree information, see the external Website: http://www.llnl.gov/pao/employee/. Please note that these ads appear on the Web.
Date of ads: Approx. Aug. 14 to 21. Ads appear on the Web for seven days.

Automobiles

1984 GMC Jimmy, diesel. $2,000. Full size. 6.2L engine. 210,000 miles. 925-989-2192

1992 GMC Vandura customized van. $2,800 OBO. <74K original miles, custom interior 925-980-0120

1998 Subaru stationwagon. $8,600. Legacy Outback, 4D. 54K miles, 5-speed. 925-918-0367

1999 Nissan Sentra GXE Limited Edition. $4,950. 925-454-0478

2001 Lexus ES300. $12,900 OBO. 88K mi, coach edition, original owner. 209-518-2156

2002 VW Jetta GLS 1.8T. $12,000 OBO. 510-652-1994

2002 VW Jetta GLS 1.8T Very good condition. 57.8k miles $12k or best offer. 510-652-1994 or 925-424-4076

2003 Subary Legacy Outback Wagon AWD. $11,200. 925-408-6262

2004 Ford Taurus. $8,000. SES - 4dr sedan, V6, new tires, 44K miles. Good condition, reliable, 925-294-9651

2004 Mitsubishi Eclipse Spyder GTS convertible. $17,500 OBO. 33,530 miles. 925-699-4251

2004 Toyota Corolla. $11,000. S, 4 dr coupe, auto, power locks & windows, 70K miles, am/fm/cd 707-747-5425

2005 Ford Escape XLT. $18,500 V6 3.0, liter, AT, 4WD, 25K miles, loaded, excellant condition. 209-835-6261

2005 Honda Accord LX. $11,500 OBO. Mint cond, great commuter car. 60,000 highway miles. 925-584-1612

2006 Ford Mustang GT Coupe Premium. $22,000. 925-200-9204

2006 Honda Accord Ex V6. $23,500. Excellent cond., top of the line model with tinted windows, 925-525-5913

Volvo V70. $7,500 OBO. w/Yakima roof rack/ storage pod/bike racks; 97.5K. 925-372-8758

Chrome wheels for 2002 PT Cruiser. $100. 5 lug. Very sporty looking. 209-951-0115

Mercedes S500. $34,000. 2001 S500, black on black, 63,000 miles, Call 408-420-7449 or 925-373-4791

Rims. $250. American Racing 16" 5 lug pattern. Excellent condition. (925) 292-8810

1999 Saturn. $3,300 OBO. SL2 4 door Sedan,109,000 miles,power windows and locks , CD. 925-519-3003

Spare tire carrier. $95. Swing-away for small Chevy/GMC blazer. 925-443-1715

VW Jetta GLI turbo - 2005. $17,000. Black. 48,400 miles, 4 cyl., turbo, 6-speed manual trans, 209-568-6200

Bicycles

24 in. boy's mountain bike, helmet and lock. $50. 18 speed Magna Great Divide DH1 series. 608 354 5535

Miyata 54 cm 18-speed touring bike. $300. Model 615, 54 cm touring bike. 925-454-0877

Schwinn bicycles. $50 each. Men's Continental w/quick release hubs. Women's World Sport. 925-998-2048

Boats

14 Ft. aluminum boat, 15 HP outboard. $2,150 OBO. 925-245-1414

Hollowform Kayak. $250. 13-foot tough resilient, roomy (compared to play boats) 925-961-1517

Electronic Equipment

36" Sony Trinitron with surround sound and stand. $750 209-568-6200.

Canon PowerShot camera. $100. With image stabilization. 10x optical zoom. 925-455-0515

CD Jukebox. $40. Sony megastorage 300 disk CD changer/player. 925-398-0545

Centipede machine. $1,100. 1980 Atari, great condition. 209-221-7856 or 510-331-2849

Computer. $30. E 500. Needs hard drive. 925-735-6002

Crucial 2x1GB PC-8500 DDR2 memory. $100. 925-548-1989

Electronic estate sale. 21172 Aspen Ave., Castro Valley.Aug. 25-26, 9 a.m.-5 p.m. 510-537-3250

Iomega CDRW, external drive, like new. $25. 209-914-2132

Lexmark printer. $20 OBO. Lexmark X83 color ink printer/scanner/copier with manuals and software, 925-449-5481

Ms. Pac Man machine. $1,400. 209-221-7856 or 510 331-2849

New Nikon green laser pointer. $100. High quality. 925-455-4484

Playstation II Slim. $130. 209-874-3724

Vintage 50s guitar with case. $400. 1950s Vintage rare Kay accoustic electric guitar, 209-914-2132

Giveaway

Big split-level computer table & chair. 925-449-3165

Free ink cartridges. Xprint ink cartridges - Epson Stylus compatible. 925-998-2048

Men's bicycle. Older bike with well worn looks, in good running shape. 925-930-6820

Rockwell table saw. 12-inch with stand and side extensions. 925-961-1517

Telescope bag. Orion. (18" ID, 45" long) new condition. 925-846-1525

Wet suits (2), black, old style - zippers, diaper w/twistlocks. Good condition. 925-998-2048

Household

Oak round pedestal dining table with 4 round back chairs, $100. 925-642-2737

Curio cabinet in excellent condition, with 4 glass shelves, measures 76 height, 32 width. $150. 510 276-1135.

3-piece couch set. $700. Levitz sage green w/tan trim. 209-221-7856 or 510-331-2849

Medela 'Pump in style, advanced' breast pump with all accessories. $125. Baby Bjorn, good condition, $25. 925-456-5621

Baby items. $75. Crib bedding and matching accessories. 925-683-1047

Beautiful solid wood ladder bookcase. $145. 925-640-5469

Bed box-spring (twin) & air-conditioner (in-window) $30 each. 925-960-0313

Bed. $200. Queen size waterbed with bookcase style headboard and six drawer pedestal. 925-371-0507

Ceiling lamp. $50. Hanging stained glass, Pink, green, white, and clear hummingbird motif. 925-398-0545

Computer desk. $190 OBO. Tower, American-made, oak, 925-447-7082

Dishwasher. $100. Kenmore Model 665 Ultrawash with Quietguard. Black finish. Works fine. 925 398-0545

Disney Winnie the Pooh garden & wheelbarrow set. $30. 925-648-0671

Glass and wood cabinets. $100.I Made of unfinished pine, white melamine and glass. 209-568-6200.

Oak bookcase. $50. 4ft wide by 5ft high, excellent condition. 925-426-8452

Lounge chairs. 2 for $50. swivel, rock, recline, blue, very good condition 925-308-7025

Marble fireplace, cream color. Only asking $1,900. 925-461-5045

Mattress. $75. Single, like new condition. 209-836-1506

Pool table. $1,995.Custom oak with slate top; designed as huge dining table and seats 8, 925-443-3066

Rice cooker & butcher block. $75 & $50. 925-606-7422

Soccer ball humidifier. $15. 1 gallon with auto off function. 925-648-0671

Solid oak bedroom set. $495. Twin size, includes trundle bed with two mattresses. 925-243-9123

Table w/chairs. $75. 60"x35" honey pine, casters on chairs. Excel.cond. 925-449-5116

Toy storage bins. $20. shelf unit, 12 plastic bins fit in open shelves, hardwood, 925-447-2508

TV/video cabinet. $200, obo. Ethan Allen, oak with walnut stain, 925-449-6740

Lost and Found

Lost medication. White box 6" long, 4" square. 30 doses of medication. Lost on South Mall Rd. 3-1277. 925-606-5315

Miscellaneous

1960's tractor. $3000. Fergson model 209 - diesel, bucket, scraper, newer rear tires. 925-454-1749

4 Disney Ratatouille movie certificates $12. 925-648-0671

8x10 framed Joe Montana authentic autograph. $200. 209-627-6385

Baby bottle warmer, day/night. $10. 925-413-2595

Baby bottles and related supplies. $60. 925-413-2595

Baby/infant Fisher-Price Take-Along swing. $20. good condition; 925-413-2595

Books: Naruto novels, volumes 1-14. $50. And more. 925-455-0515

California speedway (Labor Day weekend) race tickets. $620. 4 tickets. 925-548-4251

Champion generator. $150. Champion with 4000 watt capability, 209-244-8241

Christmas decor. It's never too early for Christmas. 925-640-5469

Christmas tree. $50.10 ft., used once, excellent condition 925-308-7025

Disneyland/California Adventure. $100 One Adult (age 10+) 2-Day park hopper pass. 209-839-8120

Fuel pump for fuel tank. 925-735-6002

Fun with Dick and Jane DVD. $4 Starring Jim Carrey and Tea Leoni. 925-876-5188

Halloween costume. $5. This stewardess costume has never been worn and is new in the package. 925-640-5469

Heavy duty pallets. $20 ea. 925-413-9879

Jerry can. $30. For gasoline 925-998-2048

Loom. $1,500. 36 inch, four heddle Nilus LeClerc jack loom with weaver's bench, 925-447-5831

Moving boxes. $25. Approximately 20, several different sizes, 925-964-0534

Plants. $100. Pair of Italian Cypress trees, 18 inch pots, 6.5 feet tall, 925-447-6192

Reunion. Join Alameda County 4-H'ers for an all-county reunion. Septe 9, noon to 6: p.m., Alameda County Fair Grounds. 925-371-0507 or 925-462-3215.

Rolling file drawer. $35. 925-640-5469

Santa Cruz Beach Boardwalk one day unlimited rides. $15 each. 925-648-0671

Similac w/iron powder infant formula. $10 per can. 209-499-3633

Stroller w/infant carseat. $65. 209-824-5313

Tires/rims/locks/lugs. $400. 510-919-6905

Vintage 1930s purse. Black leather. $75. Rare and in beatufull condition, 209-914-2132

Motorcycles

Dirt bike trailer , 2004 Shorelander, $800, 3 bike trailer; Yamaha 2005, TTR90, $1,200, low miles, upgraded Bug Gun exhaust, electric start; fun bike for kids; Yamaha 2005, TTR125, $2,100, low mileage, upgraded FMF exhaust, electric start, brand new; Yamaha 2004, TTR250, $3,800, less than 500 miles, Big Gun upgraded exhaust, electric start, bar guards, great condition; Yamaha 2004, TTR 225, $2,200, less than 500 miles, upgraded FMF exhaust, electric start, bar guards, good condition. 925-642-2737

1997 Honda CBR900RR. $4,000 OBO. 925-518-4885

2003 500 polaris predator ATV. $3,000. 209-825-6311

2004 Yamaha R6. $6,800. Limited edition, silver with black flames, 1477 miles, 925-337-3633

2005 Yamaha TT-R125E. $1,600. Very clean and well maintained. 209-823-4687

Motorcycle. $450. 1988 Kawasaki 305 LTD, black, "sportster type." 408-263-2846

Pets

Dachshund puppies. Miniature Dachshund puppies, AKC registered, 209-456-2775

Free cat, neutered male rescue cat. He is extremely friendly and playful. 925-997-1046

Free cats, neutered, indoor cats. One pure white with blue eyes. The other is a snowshoe mix. 650-714-1612

Pet fence. $169. Never used, Innotek premium rechargeable. 925-785-4680

Recreation Equipment

Golf club. $120. King Cobra X/Speed 460cc titanium driver. 925-462-9455

Golf pull cart .$10. 925-447-2508

Tent. $50. Hunter's blue rip-stop nylon, floor area 6'x6', mosquito netting. 925-998-2048

Ridesharing

Carpool. Modesto to Lab carpool needs a 4th driver/ rider. 9-80s. Call 2-9102 209-848-0365

Ride share. $160. Leaving Montclair at 7 a.m. Leaves lab a night at 5:30 p.m. 4-6215. 510-531-4399

Ridesharing. Lamorinda carpool has opening. Lab hours 8 a.m.-4:45 p.m., 2-9823 or 2-4213. 925-253-0498

Shared Housing

LLNL employee needs local housing. Adult, male, no cats. 702-299-5159

Room available. $500. Large furnished room, private bath- Tracy, responsible male. 209-612-2840

Room available. Livermore. $650 Furnished w/all amenities. W/private full B/A. Female prefered. 925-784-3184

Room for rent. $700 mo. Located close to Lab in nice area. non-smoker, no pets. Pool, kitchen and laundry priv. 925-447-6301

Room for rent. In Tracy. 1/3 utilities, unfurnished, . $450 per month 209/835-8249

Room for rent. $600/mn. Livermore. prv bath, close to lab, utilities, no smk/no drugs/ no pets, $200 dep. 925-292-0681

Room for rent. $800. Furnished master bedroom and private bath available to rent in adult gated community in Brentwood. 925-447-6515

Shared Housing $1,100. Shared housing in Pleasanton. $1,100. Private bed & bath. 925 321-0753 925 321-0753

Shared housing. $600 + 1/3. Responsible, stable roommate share house w/2 women (share bath with one). 925-321-3142

Trailers

Desert Fox. $18,500 OB. 2004 21SW Desert Fox Toy Hauler trailer. 925-516-8339

H&H Box Trailer. $5300. 925-373-8244

Trucks

1986 Nissan 4X4. $3500. Great tires, utility box and great body. 209-470-4179

1998 Dodge Ram 1500 Quadcab. 4X4. $9,800 OBO. 925-876-5588

2002 Toyota Tundra Limited Access Cab 4D. $16,000 OBO. Very low miles, only ~59k, 2 wheel drive, beige. 209-944-9020

2004 Nissan Titan SE Crew Cab 4WD. $19,000. 42,000 miles, 5.6 L V8, 4WD, crew cab (4 doors), 925-516-2774

Vacation Rentals

3BR or 2BR Timeshare in Palm Springs/ Orlando $1,200 OBO. 209-321-1506

Arnold cabin. Cozy mountain cabin above Arnold. 4 bedr, 2 bath. 925-245-1114

Big Island Hawaii Kona Coast Vacation Home. Last min & Lab discounts available. 415-377-5361

Cabin. $225/wknd. Cabin near Pinecrest Lake, off Sonora Pass Road, 3 bdrm/2 bath w/pool table, large deck, 925-449-6613

Maui HI. rental. $625/Wk. Recently updated resort available for 7 nights. Studio suite sleeps 2 privatly and 4 total. 925-519-0510

Maui, HI Kahana Reef oceanfront 1BR/1BA condominium. Beautiful two-island (Molokai and Lanai) view. 925 449 0761

Santa Cruz beach house . Soooo cute beach house in Santa Cruz, near harbor. 2 bedr, 2 bath, fully loaded kitchen, spa. 925-245-1114

South Lake Tahoe chalet. 3 bedroom 2 bath Chalet, nicely furnished, newly remodeled kitchen, comfortable, 209-599-4644

Tahoe vacation rental. $700/wk. South Lake Tahoe rental. Sleeps 6 comfortably. Pets welcome. $700/wk. 925-556-9511

Wine country rental. $150/night. Monte Rio - 925-513-4767

Wanted

Aircraft . Open Aircraft for restoration, dismantled OK, early model Ercoupe Cessna 140TD with metal wings, Luscombe Silvaire 8A Milt. 707-962-0309

Auto work. Need work done on a Tercel '93 transimission 925-735-6002

Looking for someone to repair a Big Screen yr 2007 "Sony" TV. The convergance needs repair. 925-783-0473

Looking for apartment in Livermore that accepts small dogs. 925-413-0675

Need someone to replace old electric cooktop with new gas (propane) cooktop. 925-447-4830

Responsible college or high school student needed to babysit 15-year old boy with autism 2-3 afternoons a week from 3-6 p.m. Great pay. He is easy to get along with and lots of fun. Good first job opportunity. Will gain knowledge of special needs children. Call 443-3396 (evenings).

Television for dorm room. 209-825-6063

Looking for a used Toy Hauler Trailer (not 5th Wheel), with bedroom. 925-998-3769

Anyone who has a 2001 to 2006 extended cab or quad cab for sale. 925-245-1414

Getting ready to haul moving boxes to the dumps? I'd be happy to take them off your hands. I live in Livermore. 925-454-9224

Recliner lift chair for 5'6", 200+ lb. person. Dark green or brown cloth covered preferred. 209-951-0115

Welding books, equipment, supplies. 925-735-6002

PEOPLE NEWS

Teacher Research Academy gets NSF funding to evaluate classroom impact

By Linda Lucchetti,
Newsline staff writer

The National Science Foundation (NSF) recently awarded funding to evaluate the impact of the Teacher Research Academy on the education community it serves. This three-year project will help validate this teacher professional development model and support its dissemination on a larger scale.

The Teacher Research Academy conducted through the Edward Teller Education Center (ETEC), which represents the joint efforts of the Laboratory's Science and Technology Education Program and the UC Davis School of Education, enables middle and high school science teachers to develop and maintain mastery in their scientific fields.

The project entitled "Validation and Refinement of a Model for Teacher Professional Development that Leverages a Major Applied Research Laboratory" is under the direction of Jamal Abedi, professor in the School of Education at UC Davis, Laura Gilliom, University Relations Programs director, and Carey Kopay, the executive director of ETEC. UC Davis will receive and manage the NSF grant.

"This is a good 'win-win' for the LLNL and UC Davis team," Gilliom said. "It will allow the TRA to be assessed credibly." Gilliom added that the competition for the grant award was difficult, with more than 300 proposals submitted within the program category Discovery Research K-12.

Kopay said: "As part of the proposed research, we will conduct interviews and surveys with more than 200 teachers to assess differences in instructional practices of the program's participating teachers as compared to non-participating teachers."

Kopay added the data collected will be used to determine the impact of the program on teachers' leadership qualities as well as their attitudes towards science, and will identify future revisions to the model. If validated, the effort could result in a model program to be shared nationwide.

For more information about the Teacher Research Academy, go to the Web at http://etec.ucdavis.edu/academies/.

Jacqueline McBride/Newsline

From left to right: Eva Kwan (Piedmont Middle School); Lilibeth Pinpin (Hogan High School); Kevin Scully (Rodriguez High School); Jennifer Bilka (Health Professions High School); and Susan Edgar-Lee (Livermore High School) discuss a DNA lesson during the biotechnology workshop at the Lab's Teacher Research Academy (TRA) this summer. A recently awarded NSF grant will assess the academy's impact on teacher education.

In memoriam

Alfred Edward Sassus

Alfred Edward Sassus Jr., a Lab retiree and native of San Francisco, died Aug. 8. He was 75.

Born Aug. 29, 1931, he graduated from the University of San Francisco in 1953.

He served as an officer in the U.S. Army from 1953-1955. After the Army, he worked at LLNL developing computer programs for applied quantum mechanics. A pioneer in the computer field, he had a long and rewarding career with Shell Oil and Bank of America.

During his retirement, he enjoyed being a docent at the San Francisco Fire Museum. He was a member of the Phoenix Society, Ligue Henri IV, and the San Francisco Fire Department Historical Society.

Sassus is survived by his wife of 51 years, Beverly Sassus; his children Jacqueline Martin (Mark Biglieri), Paul Sassus (Dora Tejada) and Yvette Scannell (Bill Scannell), grandchildren John, Nicole, Kristen and Jennifer Martin, Madeline and Sarah Scannell and Evelyn Sassus; Sister Suzanne Sassus, CSJ; and sister-in-law Shirley Hernon.

Donations may be made in his name to the San Francisco Fire Department Historical Society c/o Paul L. Barry, P.O. Box 31580, San Francisco, CA 94131.

PETERSON, continued from page 3

UCRP has been so successful we have enjoyed a lengthy hiatus of employee contributions. However, it did require them in the past, and last year the Regents authorized restarting contributions to UCRP. While UCRP has not yet resumed employee contributions, please note that the NNSA contract with LLNS contains language that requires LLNS to consider any changes that UC makes related to their benefits including future employee and employer contributions to ensure financial soundness.

The Laboratory's continued excellence and reputation as a "national jewel" depends on a thriving workforce. Certainly, a solid benefits package is an important component in attracting and retaining highly capable employees and fostering an environment in which we can all achieve our full potential. It is not in LLNS' interests to take any actions that would undercut the benefits in TCP1.

Your benefits choice is an important one, but also a very personal one. I encourage you to try and set aside your anxiety about the security of the defined benefit plan as well as any fears you may have about the longevity of LLNS to think through which plan is financially best for you. Ultimately in making your decision, it is important to consider your age, years of service with UCRP, number of years you plan on continuing to work and whether you plan on working those years at the Laboratory or elsewhere. Also ask yourself whether you value cash in hand over a long-term annuity. And finally, you need to think carefully about the assumptions you make regarding future compensation, inflation and market performance when analyzing the TCP1 and TCP2 options.

I am not a lawyer, a pension plan professional nor a financial adviser. I am a colleague working my way through the choices offered me and I know how important it is to approach this carefully, objectively and rationally — unclouded by fear. I encourage you to do the same.

NEWSLINE

Newsline is published weekly by the Public Affairs Office, Lawrence Livermore National Laboratory (LLNL), for Laboratory employees and retirees.

Public Affairs Office: L-797 (Trailer 6527), LLNL, P.O. Box 808, Livermore, CA 94551-0808
Telephone: (925) 422-4599; Fax: (925) 422-9291
e-mail: newsline@llnl.gov or newsonline@llnl.gov
Web site: http://www.llnl.gov/pao/
Distribution: Mail Services at LLNL

Newsline editor: Don Johnston, 3-4902

Contributing writers: Nancy Garcia, 2-1099; Bob Hirschfeld, 2-2379; Linda Lucchetti, 2-5815; David Schwoegler, 2-6900; Anne M. Stark, 2-9799; Stephen Wampler, 3-3107.

Photographer: Jacqueline McBride, 2-0175
Designers: Julie Korhummel, 2-9709; Kathleen Smith, 3-4769

For an extended list of Lab beats and contacts, see http://www.llnl.gov/pao/contact/

science news

Phoenix Project's pulsed-power shot a success at Nevada Test Site

Workers at the Lab's Big Explosive Experimental Facility at the Nevada Test Site executed helical hydrodynamic test one, or HHT-1, on Saturday, Aug. 4. The shot was a part of the Phoenix Project, which will use a world-class, pulsed-power system to drive a series of Livermore's isentropic compression experiments. These ICE experiments will improve our knowledge of the properties of materials at extreme pressures.

A hydrodynamic test, or hydrotest, is a non-nuclear scientific experiment that shows how materials react to high-explosives detonation. "Hydro" refers to the fluid-like flow of solids under the influence of an explosion.

The HHT-1 test focused on a new advanced helical generator system that will be used in future experiments. Program manager Scott McAllister announced that, "All of the test data was successfully recorded, and the helical generator performed exactly as predicted."

According to McAllister, David Reisman of B Division designed the generator, while Fred Ellsworth of Defense Technologies Engineering Division, and David Goerz of National Security Engineering Division handled the engineering activities. Leon Berzins led the field activities at NTS. A group of Livermore and NTS tech employees supported the key individuals.

Other major contributions emerged from within the DOE complex and DoD. The Kansas City Plant fabricated the helical coil. China Lake loaded the high explosive in the armature. The Air Force Research Laboratory played a significant supporting role that included serving as technical consultants on the generator, McAllister added.

"All in all, it was a highly successful effort by a highly motivated team," McAllister concluded.

As part of the Phoenix Project, workers at the Big Explosive Experimental Facility at the Nevada Test Site recently executed helical hydrodynamic test one.

Fuel efficiency drives design of more aerodynamic vehicles

Top researchers from around the world will meet at Lake Tahoe next week to discuss how computer simulations and experimental advances could help design more fuel-efficient trucks, buses and trains.

Called "The Aerodynamics of Heavy Vehicles II: Trucks, Buses and Trains" conference, the seminar will bring together about 80 of the world's leading scientists and engineers from national labs, academia and industry, including truck manufacturers.

"This conference will focus on an important national security and energy issue," said LLNL engineer Rose McCallen, the lead on the Department of Energy Heavy Vehicle Aerodynamics Project for four organizations in the consortium. "Our nation's dependence on oil is a key national security issue, and minimizing vehicle aerodynamic drag will significantly reduce our dependence on foreign oil resources."

As an example, McCallen noted that large (Class 8) tractor trailers traveling at highway speeds use more than 50 percent of their fuel in overcoming aerodynamic drag, and that aerodynamic drag accounts for 80 percent of the fuel consumption for high speed trains in Europe, China and Japan.

A similar conference on "The Aerodynamics of Heavy Vehicles" was first held in Monterey in 2002. This year's conference, which will host researchers from Australia, Canada, China, France, Germany, Israel, Taiwan and the United States, opens Sunday evening and closes Friday.

It is sponsored by Brooklyn, N.Y.-based Engineering Conferences International and co-sponsored by LLNL, the Truck Manufacturers Association, International Truck and Engine Corp. and CD Adapco, a software developer.

One of the leading features of the conference will be a Monday night industrial perspective session in which truck manufacturer and fleet representatives from U.S. Xpress Enterprises, Freightliner LLC, Kenworth Truck Company, International Truck and Engine Corp and Great Dane Trailers will talk about the importance of reducing aerodynamic drag in order to cut fuel costs.

Already, a prototype truck developed by International Truck and Engine Corp. and Great Dane Trailers for a leading retail manufacturer, with assistance from the Heavy Vehicle Aerodynamics Project, has produced a 7 percent improvement in fuel economy.

"While a 7 percent reduction in fuel usage may not seem significant, if these savings were to be extended to the full U.S. truck fleet, it would result in saving about 10 million barrels of oil each year," McCallen said.

The prototype truck, unveiled at DOE headquarters in Washington D.C. in November 2006, included features such as angled panels on the top sides of the rear trailer, a lower trailer floor and a tapered trailer top.

Wednesday morning's program will showcase an invited talk by Remi Gregoire, the core competence network leader in aerodynamics for Alstom Transport, which built the "V150" train that set a world record for train speed in April, clocking 357.2 mph.

That evening, the conference's keynote speaker, David Schimel of the National Center for Atmospheric Research, will discuss "Global Warming: The Earth's Carbon Budget."

Among the Livermore researchers participating in the conference will be computational scientist Kambiz Salari, who will present a new approach to turbulence modeling, and engineer Jason Ortega, who will discuss the use of an LLNL device to reduce the drag between tractors and trailers. Ortega and Salari have conducted experiments using this device with the NASA Ames Research Center.

"The consideration of aerodynamics is critical in the improvement of commercial transportation systems and in minimizing the impact on the environment and climate change," McCallen said. "Hybrid vehicles and fuel-cell powered vehicles are likely to have less power available, so to maintain performance, aerodynamic efficiency will need to increase.

"Light-weight construction will have to be pursued more vigorously, but this introduces increased problems in side winds. As a result, aerodynamics and safety will take on an even more important role."

This year's conference is dedicated to the memory of Sid Diamond, who started funding for the Heavy Vehicle Aerodynamics Project while he was with the DOE's Energy, Efficiency and Renewable Energy Office. Diamond died in 2005. Beyond LLNL, the Heavy Vehicle Aerodynamics Project has three other members — NASA Ames Research Center, USC and Argonne National Laboratory.

More information about next week's conference can be found on the Web at http://www.engconfintl.org/7ad.html. In addition to McCallen, the two other conference chairs are Jim Ross of the NASA Ames Research Center and Fred Broward, a USC professor.

NON-PROFIT ORG.
U.S. POSTAGE
PAID
LIVERMORE, CA
PERMIT NO. 154

Newsline
UC-LLNL
PO Box 808, L-797
Livermore, CA 94551-0808